REMARKS

Amended claims 5, 6, 8, 9, 10 and new claim 21 remain pending in the application with the present amendments. In the Office Action, claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,798,561 to Gutierrez-Aitken ("*Gutierrez-Aitken*"). In addition, claims 1, 3, 4, and 7-10 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,481,120 to Mochizuki ("*Mochizuki*"). Claims 5 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Mochizuki*, in view of U.S. Patent No. 6,287,930 to Park ("*Park*"). For the reasons set forth below, applicants respectfully submit that the claims as amended herein overcome the rejections, and place the application in condition for allowance.

As amended herein, independent claim 8 recites a bipolar transistor in which a centerline of the emitter is in alignment with a centerline of a collector pedestal. Amended claim 8 recites an invention, for which an exemplary embodiment is shown and described in applicants' specification at paragraphs [0052]-[0061], with reference to FIGS. 10-17. While the recitations of claim 8 relate to the finished product alone, it is clear from applicants' Specification that alignment of the emitter centerline with that of the collector pedestal is a natural outcome of a process used to form them.

Applicants respectfully submit that none of the references cited in the Office Action teach a bipolar transistor having this novel feature. In the Office Action, the Examiner rejected the formerly pending claim 8 under 35 U.S.C. §102(b) as being

anticipated by *Mochizuki*. It is respectfully submitted that as amended herein, amended claim 8 overcomes the rejection and is fully distinguished from *Mochizuki*.

While *Mochizuki* shows and describes many different bipolar transistor embodiments and methods for making bipolar transistors, *Mochizuki* clearly fails to teach a bipolar transistor in which a centerline of the emitter is in alignment with a centerline of the collector pedestal. At best, the various Figures in *Mochizuki* might lead one to assume that the emitter element shown therein is centered over the collector element. However, the description of the various embodiments provided in *Mochizuki* indicate that such an assumption is unjustified. Nowhere in the description or claims of *Mochizuki* do the words "align" or "alignment" appear and nowhere do the words "center", "centerline" or "central" appear. Clearly, there is no teaching in *Mochizuki* that indicates that the centerlines of the emitter element and the collector pedestal are aligned.

In point of fact, *Mochizuki* describes processes which suggest that the centerlines of the emitter element and the collector pedestal of the finished transistor are NOT aligned. The description of embodiment 6 (cols. 12-13) in *Mochizuki* is representative of every embodiment described therein. As described at col. 12, ln. 53 through col. 13, ln. 14, a series of semiconductor layers are grown by blanket epitaxy over the collector pedestal, after which the emitter layers are etched used a photolithographic mask to expose the base. Neither the epitaxial growth of the base and emitter layers, nor the subsequent masking and etching steps are performed in a way that requires a centerline of the emitter to be aligned with a centerline of the collector pedestal. *Mochizuki* does not

describe any way which would cause the subsequent epitaxy, masking and etching steps to align the centerline of the emitter with the centerline of the collector pedestal.

Other features of the claims which are believed to provide independent bases for distinguishing the invention are recited in claims 5, 6, 9 and 21. Claim 9 recites a preferred alignment in the finished transistor. Claims 5, 6 and 21 recite features including a shallow trench isolation, its placement, and other related features which also further distinguish the invention from the cited references.

Support for the present amendments is provided, *inter alia*, at paragraphs [0037]-[0039], [0052]-[0061] and in the drawings including FIGS. 3, and 10 through 17.

This response is filed with a petition for a two-month extension of time to respond to the Office Action. If any other fee is due in connection with this response, please debit the Deposit Account No. 09-0458 of the Assignee International Business Machines Corporation. If there is an overpayment, please credit the same account.

Respectfully submitted,

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By: _____

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